

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		



MATHEMATICS 0580/12

Paper 1 (Core) May/June 2012

1 hour

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator Geometrical instruments

Mathematical tables (optional) Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer all questions.

If working is needed for any question it must be shown below that question.

Electronic calculators should be used.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.

For π , use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

The total of the marks for this paper is 56.

This document consists of 11 printed pages and 1 blank page.



For Examiner's

Use

48

1	Work out the value of	$\frac{48}{19.1 - 3.5 \times 4.6}$	- .			
				Answer _•		[1]
2	Write the following in o	order of size, sta	arting with th	ne smallest.		
		0.83	$\frac{5}{6}$	82%	$\frac{23}{28}$	
		Answer	<	<	<	[2]
3	The ferry from Helsink The journey takes 28 ho Work out the day and to	ours 45 minutes	3.		a Tuesday.	
	P.	Inswer Day			Time	[2]
4		T F	RIGONO	METRY		
	From the above word, v	write down the l	letters which	have		
	(a) exactly two lines of	of symmetry,				
				Answer(a)		[1]
	(b) rotational symmetr	ry of order 2.				
				Answer(b)		[1]

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average temperature (°C)	-4.6	-2.2	4.5	13.1	19.8	24.0	25.8	24.4	19.4	12.4	4.1	-2.7

(a) Work out how many degrees higher the temperature is in December than in January.

Inswer(a)	°C	[1]	

(b) Find the range.

$$\mathbf{6} \qquad \mathbf{a} = \begin{pmatrix} 5 \\ -3 \end{pmatrix} \qquad \mathbf{b} = \begin{pmatrix} -2 \\ 7 \end{pmatrix}$$

Work out $3\mathbf{a} + \mathbf{b}$.

$$1\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \frac{p}{12}$$

Work out the value of p.

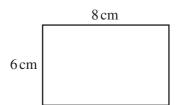
Show all your working.

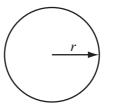
$$Answer p =$$
 [2]

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8	A lake has an area of 63 800 000 000 square metres.			
	Write this area in square kilometres, correct to 2 signif	icant figures.		
		Answer	km ²	[2]
9	(a) Simplify $a^{-3} \times a^8$.			
		Answer(a)		[1]
	(b) Work out the value of 5^{-2} .			
		Answer(b)		[1]
-				
10	The number of people, n , who attended a concert was	12 600 to the	nearest 100.	
	Complete the statement about n .			
	Answer		≤n<	[2]
11	Keiko travels from Tokyo to London for the Olympic On the internet, a flight costs £767.	Games.		
	(a) Use the exchange rate £1 = 143 Japanese Yen to	find the cost	of the flight in Jananese Ven	
	(a) Obe the exchange rate of 113 supuness 1 of to	inia the cost	or the hight in superiose 1 cm.	
		Answer(a)	Yen	Г11
		11115 11 61 (61)	701	[+]
	(b) Write your answer to part (a) in standard form.			
		Answorth)		[1]
				1 * 1

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The perimeter of the rectangle is the same length as the circumference of the circle.

Calculate the radius, r, of the circle.

Answer r =	 cm	[3]

13 (a) Factorise $xy - y^2$.

(b) Solve 4x - 7 = 12.

$$Answer(b) x =$$
 [2]

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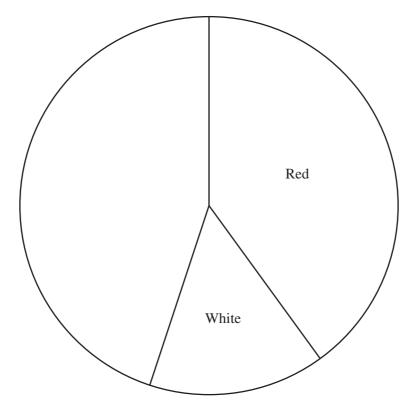
14	Sca	tter diagrams a	are drawn to	compare	sets of dat	a from	each te	am in	a hockey le	eague during a	year.
	Write down the type of correlation you would expect to see when the data recorded is										
	(a) the number of games won and the total points scored,										
	Answer(a)[]									[1]	
	(b)	the number o	f games dra	wn and th	ie average						
						1	Answer	·(b)			[1]
	(c)	the number of	f goals scor	ed and the	e final posi	tion in	the leas	gue.			
						A	1nswer	(c)			[1]
15											
							7 ! !				
									i - 		
			<				 				
	The	diagram show	za o guadrile	toral dray	i wn on a 1 a	m cano	o orid	J	-ii		
		_	-			-					
	(a)	Write down to	ne matnema	iticai nam	e of the qu	iadriiate	erai.				
					Answe	r(a)			••••••		[1]
	(b)	Find the area	of the quad	rilateral a	nd give the	e units.					
						A	nswer(b) <u>.</u>			[2]

16 The shirt colour of the teams in a football league are shown in the following table.

Colour	Frequency
Red	8
White	3
Blue	7
Gold	2

The pie chart shows some of this information.

The sectors for red shirts and white shirts have been drawn.



(a) Calculate the angle of the sector for blue shirts.

1 /	1	$\Gamma \gamma$	٦
Answer(a)	12	ı

(b) Complete the pie chart.

[1]

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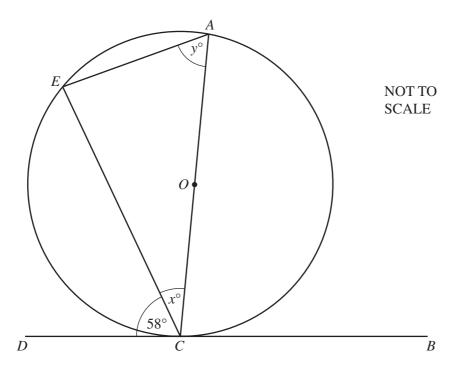
				8		
17	Solv	ve the simultaneous equations.	6x + 2y = 22 $4x - y = 3$			
				Answer x =		
				<i>y</i> =		[3]
18	The	taxi fare in a city is \$3 and the	en \$0.40 for eve	ery kilometre travel	led.	
	(a)	A taxi fare is \$9.				
		How far has the taxi travelled	?			
				Answer(a)		km [2]
	(b)	Taxi fares cost 30% more at r	night.			
		How much does a \$9 daytime	journey cost at	night?		

Answer(b) \$ _____[2]

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AC is a diameter of a circle, centre O.

BCD is a tangent to the circle and *E* is a point on the circumference.

Angle $ECD = 58^{\circ}$.

Work out the value of

(a) x,

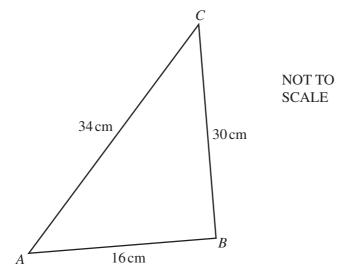
$$Answer(a) x =$$
 [2]

(b) *y*.

$$Answer(b) y =$$
 [2]

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For Examiner's Use



(a) Write down all your working to show that angle ABC is a right angle.

Answer(a)

[2]

(b) Use trigonometry to calculate angle *CAB*.

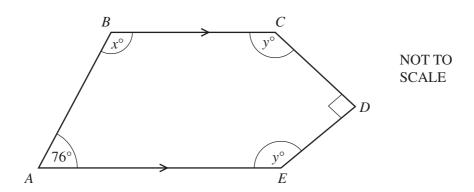
Answer(b) Angle CAB = [2]

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Answer(a)

[2]

(b)



The diagram shows a pentagon *ABCDE*. *BC* is parallel to *AE* and angle *CDE* is a right angle.

Find the values of x and y.

 $Answer(b) x = \underline{\hspace{1cm}}$

y = [3]

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